Translation





PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 02SGL0112WOP	FOR FURTHER A	CTION	See Form PCT/IPEA/416			
International application No.	International filing da	te (day/month/year)	Priority date (day/month/year)			
PCT/EP2003/013353	27 November 20	03 (27.11.2003)	03 December 2002 (03.12.2002)			
International Patent Classification (IPC) or national classification and IPC H05B 3/03						
Applicant SCHOTT AG						
 This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 						
2. This REPORT consists of a total of	6 sheets	, including this cover sl	heet.			
3. This report is also accompanied by A	-					
a. (sent to the applicant and	to the International Bu	reau) a total of 13	sheets, as follows:			
sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).						
sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.						
b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).						
This report contains indications relating to the following items:						
Box No. I Basis of the re	port					
Box No. II Priority						
Box No. III Non-establish	ment of opinion with re	gard to novelty, inventi	ive step and industrial applicability			
Box No. IV Lack of unity of invention						
Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement						
Box No. VI Certain documents cited						
Box No. VII Certain defects in the international application						
Box No. VIII Certain observations on the international application						
Date of submission of the demand		Date of completion of this report				
08 May 2004 (08.05.2004)		17 M	March 2005 (17.03.2005)			
Name and mailing address of the IPEA/EP		Authorized officer				
Facsimile No.		Telephone No.				



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Interior No.
PCT/EP2003/013353

Box No.	I	Basis of the report						
 With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item. 								
	This report is based on translations from the original language into the following language, which is language of a translation furnished for the purpose of:							
Ì	international search (under Rules 12.3 and 23.1(b))							
		publication of the international applic	ation (under Rule 12.4)					
		international preliminary examination	u (under Rules 55.2 and/or 55.3)					
2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report): The international application as originally filed/furnished								
I \		scription:						
	pages	sonphon.	1, 3-54	, as originally filed/furnished				
1	pages	* 2	received by this Authority on	10 December 2004 (10.12.2004)				
	pages		received by this Authority on					
	the cl	aims:						
	pages			, as originally filed/furnished				
	pages	·	, as amended (tog	gether with any statement) under Article 19				
	pages		received by this Authority on	10 December 2004 (10.12.2004)				
	pages		received by this Authority on					
	the d	avings:						
	pages	awings:	1/7-7/7	, as originally filed/furnished				
	pages		received by this Authority on					
	pages		received by this Authority on					
	0.580	vance listing and/or any related table(s	s) - see Supplemental Box Relating to Se	equence Listing				
	a scq	ionee using and/or any related table(s	s) - 300 Supplemental Box Relating to Se	Addition Elisting.				
3	The a	mendments have resulted in the cance	illation of:					
		the description, pages						
]		the claims, Nos.						
		the drawings, sheets/figs						
		the sequence listing (specify):						
		any table(s) related to sequence listing						
4.	made	, since they have been considered to 70.2(c)). the description, pages		report and listed below had not been indicated in the Supplemental Box				
	H	the claims, Nos.						
	님							
	닏							
	Ш	any table(s) related to sequence listing	g (specify):					
* If iten	n 4 ap	plies, some or all of those sheets may	be marked "superseded."					

INTERNATIONAL PRELIVANARY EXAMINATION REPORT

Interpretal application No.
PCT/EP 03/13353

1 - 71

NO

YES

NO

v .	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement					
1.	Statement					
٠	Novelty (N)	Claims	1-71	YES		
	northly (1-)	Claims		NO		
	Inventive step (IS)	Claims	1-71	YES		
1	Illychicty stop (10)		the state of the s			

Citations and explanations

Industrial applicability (IA)

1. This report makes reference to the following document:

Claims

Claims

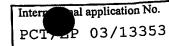
Claims

D1: US-A-4 246 433 (SEIFRIED GEORGE B ET AL) 20 January 1981 (1981-01-20).

- 2. The present application complies with the requirements of PCT Article 33(2), because the subject matter of claims 1-71 is novel.
- 3. The present application complies with the requirements of PCT Article 33(3), because the subject matter of claims 1-71 involves an inventive step.
- 4.1 The invention relates to a method and a device for heating melts, more particularly a method for the conductive heating of melts with cooled walls, in which the melt is conductively heated and the current flows between at least two cooled electrodes, such as is known from document D1.

The closest prior art is document D1, from which the claimed invention differs by the characterizing portion of claim 1: in that each electrode replaces a particular component of the wall of the melt vessel and the melt contact surface forms a wall area of the melt vessel.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT



4.2 Claim 1 is therefore considered to be novel.

It should be noted that, in the electrically heated trough described in D1, the electrodes are introduced into the glass melt through the side walls of the trough and are surrounded on all sides by the glass melt.

4.3 Inventive step

The effect of the above-mentioned characterizing portion of claim 1 is that chemical attack of the melt on the walls is prevented and more energy is supplied to the melt.

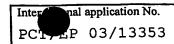
The technical problem can be considered that of providing a method with which the walls of the melt aggregate can be cooled sufficiently to prevent chemical attack of the melt on the walls and with which more energy can be supplied to the melt than is withdrawn from it through the cooled walls.

This problem is solved according to the invention with a method for heating melts, more particularly a method for conductively heating melts with cooled walls, in which the melt is conductively heated and the current flows between at least two cooled electrodes, each electrode replacing a particular component of the wall of the melt vessel.

The invention can also be interpreted to mean that, when electrodes are introduced or inserted into a melt vessel of predefined geometry, the sum of the surfaces of the melt vessel and electrodes in the region of the melt remains constant. If, for example, a particular geometry of the melt vessel is chosen, the electrodes include part of the walls of the melt vessel, the chosen geometry being retained.

The electrodes are integrated in a melt or refining aggregate in such a way that the melt contact surface forms a wall area of the melt vessel. To this end, the electrodes can advantageously be introduced into recesses

INTERNATIONAL PRELIMINARY EXAMINATION REPORT



in the cooled walls of the melt vessel. With the claimed arrangement, a favourable ratio of the surface portion of the melt vessel through which energy is introduced into the melt to the surface portion of cooled walls is achieved.

By contrast, the wall area has, until now, been enlarged, for example by additionally introducing finger electrodes (as, for example, in the cited D1), and the cooling power also increased accordingly.

Consequently, claim 1 involves an inventive step.

- 5. Similar reasoning can be applied to device claim 30.
- Consequently, claim 30 is novel and involves an inventive step.
- 6. Claims 2-29 and 31-71 are dependent claims which, in conjunction with claims 1 and 30, comply with the requirements of PCT Article 33(2) and (3).
- 7. The industrial applicability of the subject matter of claims 1-71 is beyond doubt. Consequently, claims 1-71 comply with the requirements of PCT Article 33(4).